



WG6 Soda Lime Glass Tubing with Cerium

MANUFACTURING

Millville Tube Draw

1633 Wheaton Avenue, Millville, NJ 08332, USA

STANDARD DIMENSIONS (Tolerances available upon request)

OD (mm)	Wall (mm)	Length mm (inches)
6.0-12.0	0.50-0.85	1219.2-1676.4 (48-66)
12.0-15.9	0.55-0.75	1219.2-1676.4 (48-66)
12.0-15.9	0.76-1.00	1219.2-1676.4 (48-66)
16.0-19.9	0.60-1.20	1219.2-1676.4 (48-66)
20.0-23.9	0.75-1.30	1219.2-1676.4 (48-66)
24.0-30.0	0.85-1.50	1219.2-1676.4 (48-66)

CHEMICAL ANALYSIS (TYPICAL)

Materials	Value
SiO ₂	68.8
Al ₂ O ₃	2.7
Na ₂ O	12.9
K ₂ O	3.2
CaO	5.4
MgO	3.5
BaO	2.5
CeO ₂	0.6
Minors*	0.4
B ₂ O ₃	<0.5
Fe ₂ O ₃	<0.125
As ₂ O ₃ + Sb ₂ O ₃	<0.005
PbO	<0.005

* Minors can include varying amounts of: F, S and traces of other metals.

This glass is in compliance with all regulations covering heavy metals in packaging (lead, cadmium, mercury, and hexavalent chrome).

Arsenic and antimony concentrations < 10 ppm

PHYSICAL PROPERTIES (TYPICAL)

Softening Point °C	708
Anneal Point °C	523
Strain Point °C	484
Coefficient of Thermal Expansion (cm/cm x10 ⁻⁷ /°C)	92.5
Density g/cm ³	2.53

CHEMICAL DURABILITY

USP Powdered Durability – Chapter <660>, 34 th Edition, Volume 1	Type III
EP Hydrolytic Resistance – Chapter 3.2.1, 7.0 Edition, Volume 1	Type III
ASTM E438-92	Type II
ISO 719 (1985)	HGA 2



January 1, 2012

Certificate of Compliance

This is to certify that the WG6 soda-lime glass with cerium produced by Nipro Glass meets the following:

This glass meets the requirements for Type III glass as set forth in the 34th Edition, Volume 1 of the U.S. Pharmacopoeia (May 1, 2011), General Chapter <660>, Powdered Glass Test.

This glass meets the requirements for Type III as set forth in the European Pharmacopoeia, 7.0 Edition, Volume 1 (January 1, 2011) section 3.2.1, Test B. Hydrolytic Resistance of Glass Grains

This glass meets the heavy metal requirements set forth in EU Packaging and Packaging Waste Directive 94/62/EC and in the CONEG Toxics in Packaging regulations.

Specific production and certification requirements must be part of the agreed upon specifications established between Nipro Glass and its customers.

A handwritten signature in blue ink that reads "Richard E Hall". The signature is written in a cursive style and is positioned above a thin horizontal line.

Dr. Richard E Hall
TSGL Chemist
Nipro Technical Service Glass Laboratory
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